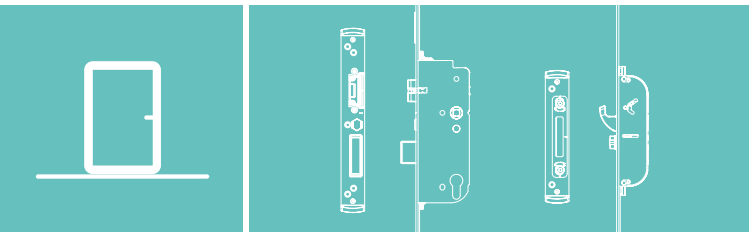
TECHNOLOGY IN MOTION

MACO PROTECT

DOOR LOCKS



Operating and maintenance instructions for door locks

END USERS

Table of Contents

WARNING!

These operating and maintenance instructions are intended for end users and must be retained. All users must be informed about the content for security reasons.

This manual is also available for download at www.maco.eu - Order number 757585.

Proper use and misuse

Proper use

In the case of normally built front and secondary entrance doors in building construction, door sashes fitted with MACO door locks are moved by actuating a handle or a cylinder. This moves the door through its turning position to the inside or outside, or in a closed or locked position within the door frame.

When closing a sash and locking the hardware, it is usually necessary to overcome the counterforce of a seal.

WARNING!

Risk of injury and property damage due to improper opening and closing of sashes!

Improper opening and closing of the sashes can lead to serious bodily injuries and considerable damage to property!

Therefore:

› It is important to make sure that the sash is guided by hand through the entire range of motion, at very low speed, and contacts to the frame without any resistance to the closing position!

› Make sure that the sash never hits or swings in an uncontrolled way (e.g. with wind)!

Any use or operation of the products that goes beyond or deviates from the intended use shall be deemed to be improper use. This can cause injuries to people or damage to other goods!

WARNING!

DANGER WHEN MISUSED!

Misuse of front or secondary entrance doors can lead to dangerous situations, such as injury to people and damage to other goods. The following uses must especially be refrained from (see also safety instructions):

› The deliberate or uncontrolled slamming or pressing of the sash against the reveal. This can damage or even destroy the hardware, frame materials or other individual parts of the doors.

› Putting obstacles in the opening area between the frame and sash!

› The intentional application of or negligence with extra loads acting on the door sash.

› Closing the sash with high force. The sash must always flow freely into the frame without any force.

ATTENTION!

When any normally obvious or visible damage or malfunction is noticed, the door must no longer be operated and must be serviced immediately by a specialist company before any further use!

IMPORTANT!

Claims of any kind due to damage caused by improper use or misuse are excluded!

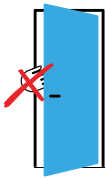
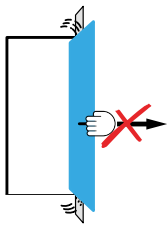
Usage restriction note:
Closed, unlocked door sashes only have a shielding function. They do not meet the requirements of:

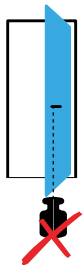
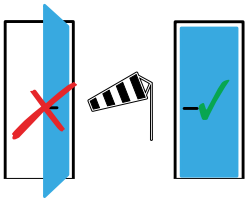
› Joint tightness
› Sound insulation
› Burglary prevention
› Watertightness
› Thermal protection

These properties can only be attained with locked sashes.

Safety and warning informations

Safety-related information
The following symbols illustrate the existing dangers on doors:

Icon	Importance
	**Risk of injury by jamming body parts in the opening edge between the door and the frame** ➜ When closing doors, never grip between the door and the frame and always be careful. ➜ Children and people who cannot estimate the danger must be kept away from the danger point.
	**Risk of injury and damage by pressing the door against the opening edge (wall-reveal)** ➜ Do not press the door against the opening edge (wall-reveal).
	**Risk of injury and property damage by putting obstacles in the opening gap between the door and the frame** ➜ Avoid putting obstacles in the opening gap between the door and the frame.

Icon	Importance
	**Risk of injury and damage to property due to extra load on the door** ➜ Prevent extra loads on the door.
	**Risk of injury and damage to property due to wind** ➜ Prevent wind from affecting the open door. ➜ Always close and lock the door immediately when windy or drafty. ➜ If high winds or storms are coming, close and lock all doors.

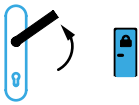
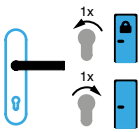
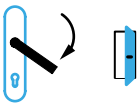
ATTENTION!

When any normally obvious or visible damage or malfunction is noticed, the door must no longer be operated and must be serviced immediately by a specialist company before any further use!

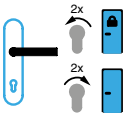
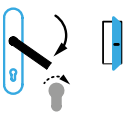
Operating instructions

Illustrative symbols
The following symbols show the various possible handle and cylinder functions and the resulting door settings.

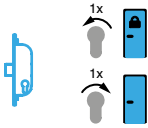
Handle-operated locks
B-TV, G-TS, C-TS, G-TA

Handle Position	Importance
	When the handle is pushed up, all locking elements (pins, bolts, hooks) are activated.
	In the basic handle position, the door lock can be locked by a double 360° rotation (in the locking direction) or unlocked (against the locking direction). If the cylinder is used for locking, the handle will be blocked.
	To open the door, push the handle downwards.

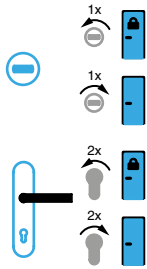
Cylinder-operated locks:
Z-TS, Z-TF, Z-RS

Handle Position	Importance
	In the basic position, the door lock can be locked by a double 360° rotation (in the locking direction) or unlocked (against the locking direction).
	Open either by handle or cylinder.

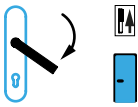
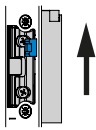
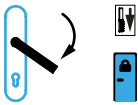
Special version: Z-TS with additional lock

Handle Position	Importance
	With a 1x 360° rotation on the additional profile cylinder in the upper door area, the lock is secured using an additional locking bar. With a 1x 360° rotation in the opposite direction, the additional lock is unlocked.

Special version: Z-TS with door limiter

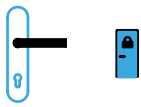
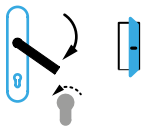
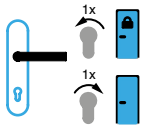
Handle Position	Importance
	The door limiter is activated by a 1x 90° rotation on the turnknob. The door can now only be opened to a small gap. **Deactivation from the inside** With a 1x 90° rotation of the turnknob in the opposite direction, the door limiter is deactivated – door back to normal operation. **Deactivation from the outside** With a 2x 360° rotation on the cylinder in the closing direction and a subsequent 2x 360° rotation in the opposite direction, the door limiter is deactivated from the outside – door back to normal operation.

Special version: Z-TF with day release

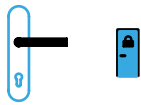
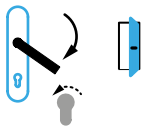
Handle Position	Importance
	The day release can be activated by simultaneously pushing the handle down and pressing the adjusting daytime actuator on the lock upwards. **ATTENTION:** During this mode of operation, the door is not closed or locked and can be accessed by anyone at any time!
	For a proper functioning of the day release, the daytime opener must also be unlocked. Now the door can be opened at any time (from the outside and the inside) without actuating the handle or using a key.
	The day release can be deactivated again by simultaneously pressing the handle down and pressing the adjusting daytime actuator on the lock down. This restores the basic function of the door lock.

Automatic locks:
The A-TS is offered in different versions, which behave differently in certain situations. If you do not know which variant of the A-TS was installed in your door, please contact the manufacturer of your door element.

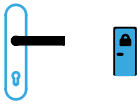
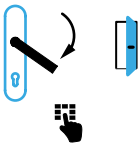
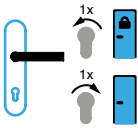
A-TS with push handle limiter (standard version)

Handle Position	Importance
	When the door is closed, all locking elements are automatically triggered.
	It can be opened either manually via the handle (only possible from the inside) or from the outside via the cylinder.
	In addition, the door lock can be locked in the basic position by a 360° rotation (in the locking direction) or unlocked (against the locking direction). If the cylinder is locked, the handle is also blocked from the inside.

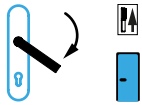
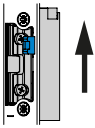
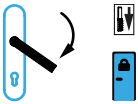
A-TS without push handle limiter (special version)

Handle Position	Importance
	When the door is closed, all locking elements are automatically triggered.
	It can be opened either manually via the handle (only possible from the inside) or from the outside via the cylinder. The locking function of the cylinder is deactivated in this lock variant – the door can be opened from the inside at any time using the handle.

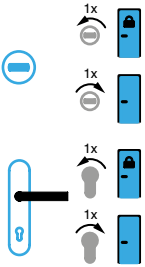
A-TS with motorised opening (A-Opener)

Handle Position	Importance
	When the door is closed, all locking elements are automatically triggered.
	Opening is performed either manually via the handle (only possible from the inside), via the cylinder or by means of electronic access control systems.
	In the case of an A-TS with push handle limiter, it is possible to block the door lock in the basic position by a 360° rotation of the key (in the closing direction) or to unlock it (against the closing direction). If the cylinder has been locked, the handle is also blocked from the inside and a motorised release is not possible. In the case of an A-TS without a push handle limiter, the locking function of the cylinder is deactivated. The handle cannot be blocked and motorised unlocking is always possible.

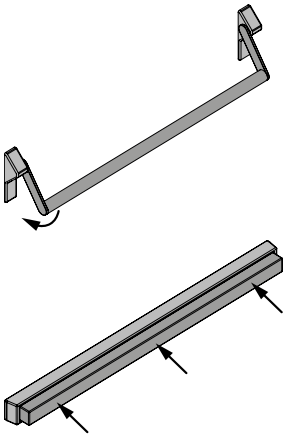
Special version: A-TS with day release
(possible with all 3 variants)

Handle Position	Importance
	The day release can be activated by simultaneously pushing the handle down and pressing the adjusting daytime actuator on the lock upwards. **ATTENTION:** During this mode of operation, the door is not closed or locked and can be accessed by anyone at any time!
	For a proper functioning of the day release, the daytime opener must also be unlocked. Now the door can be opened at any time (from the outside and the inside) without actuating the handle or using a key.
	The day release can be deactivated again by simultaneously pushing the handle down and pressing the adjusting daytime actuator on the lock down. This restores the basic function of the door lock.

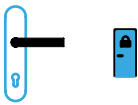
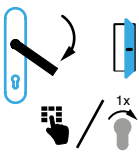
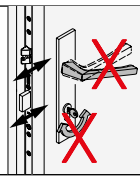
Special version: A-TS with door limiter

Handle Position	Importance
	The door limiter is activated by a 1x 90° rotation on the turnknob of the door limiter. The door can now only be opened to a small gap. The door is only held by the door limiter and does not lock automatically! **Deactivation from the inside:** With a 1x 90° rotation of the turnknob in the opposite direction, the door limiter is deactivated – door back to normal operation. **Deactivation from the outside:** With a 1x 120° rotation on the cylinder in the closing direction and a subsequent 1x 120° rotation in the opposite direction, the door limiter is deactivated from the outside – door back to normal operation. When the day position is activated, it is not possible to unlock the door limiter from the outside.

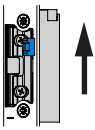
Emergency and panic exit doors

Operation	Actuation
	To open, the operating element must be pressed against the door leaf.

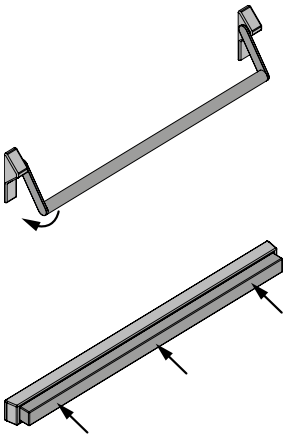
Motorised locks:
M-TS

Handle Position	Importance
	When the door is closed, all locking elements are driven out by motor.
	It can be opened either manually from the inside with the handle or the cylinder, or from the outside by means of electronic access control systems.
	Do not press the handle or activate the key during electric locking and unlocking!

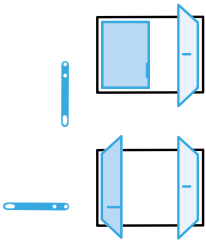
Special version: M-TS with day release

Handle Position	Importance
	If this function is provided for your door, the day release can be activated by pressing an electronic switch. **ATTENTION:** During this mode of operation, the door is not closed or locked and can be accessed by anyone at any time!
	For a proper functioning of the day release, the daytime opener must also be unlocked. Now the door can be opened at any time (from the outside and the inside) without actuating the handle or using a key.
	The day release can be deactivated again by pressing an electronic switch. This restores the basic function of the door lock.

Emergency and panic exit doors

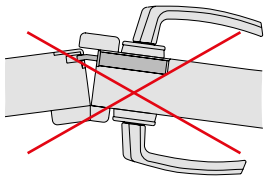
Operation	Actuation
	To open, the operating element must be pressed against the door leaf.

Notes on the operation of French Window sashes (2-sash doors)
Locking and unlocking is done by a lever on the side of the second sash. The first sash must be opened before the lever can be reached.

Lever/Sash Position	Importance
	Closing position of the sash
	Turning position of the sash

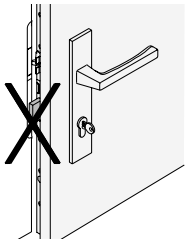
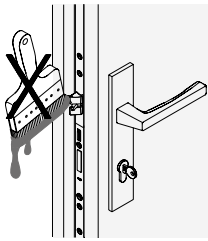
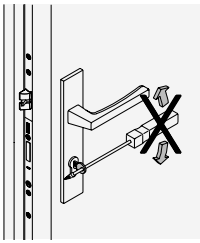
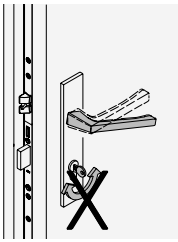
ATTENTION!

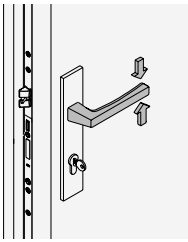
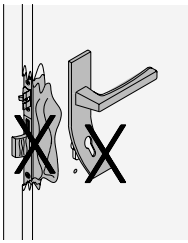
Never force 2-sash doors past the second sash opening!



Misuse

The following illustrations show various misuse operations that must be prevented!

Misuse	Importance
	Never close the door with the latch outside! The latch would be thereby damaged, and the door can no longer be closed!
	Never paint the hardware or components. Paints and varnishes penetrate the moving fitting parts and prevent proper functionality!
	Keys may only be used with the hand. Never use any kind of tools for this! Bent or broken keys mean that doors can no longer be locked or unlocked!
	Never operate the handle and cylinder lock at the same time! Otherwise, the lock mechanics will be damaged, and the door can no longer be locked or unlocked!

Misuse	Importance
	Never use excessive force on the handle! Forces above 15 kg on the handle will damage the handle or the lock mechanism!
	As soon as traces of forced use are visible, the lock or the handle must be replaced!

Usage and cleaning instructions

General Instructions for use:

Open doors always represent a danger to the health of people and to the damage of other things!

WARNING!

Risk of injury when closing doors! If when the door is being closed, the hand or other body parts come between the sash and the frame, there is a risk of crushing and thus the risk of injury!
Therefore:

- When closing doors, never grip between the door and the frame and always be careful.
- Children and people who cannot estimate the danger must be kept away from the danger point.
- Always close the door immediately when windy or drafty. Otherwise, the wind or air suction might cause the door to swing uncontrollably.
  If the sash is not closed and locked, damage to the door itself and to other objects, as well as injury to people may occur.
- Small parts underneath the door opening range can lead to damage to the floor covering!

ATTENTION!

Risk of damage due to smaller objects in the opening range of doors. During opening, these objects can become stuck between the sash and the floor and thereby cause damage.

General Cleaning Instructions:
Regular cleaning is a prerequisite for ensuring a long service life and functionality of the door. When cleaning the glass surfaces, also check the surfaces of the hardware for contamination and, if necessary, clean with a damp, lint-free cleaning cloth and a pH-neutral cleaning agent. The greasing at the lubrication points must then be restored in accordance with pages 26. Only then may the door be closed again.

› **Cleaning instructions for glass surfaces:**
Commercially available, ammonia-free glass cleaners can be used to clean glass surfaces. No detergents, acids, fluoride-containing cleaning agents or scouring agents may be used! Stubborn dirt such as splashes of paint and the like, can be removed with alcohol, washing petrol or similar.
Clean any glass surfaces only with a soft, lint-free cloth. Never use micro-fibre cloths, cleaning sponges, scouring rags, steel wool, metallic or abrasive objects or similar as these all scratch the glass surface!

› **Cleaning instructions for seals:**
Only use mild detergents to clean the seals. Never use solvent cleaning agents such as acetone, nitro-thinners, alcohols, acids, bases or the like! These dissolve the upper surface structure of seals. Special care products for seals (e.g. Vaseline, talcum powder, liquid silicones) can be used to extend the elasticity of the seal and thus the service life. The application should take place about once a year.

ATTENTION!

Micro-fibre cloths contain fabrics and fibres that can destroy the surface of glass and seals!
Micro-fibre cloths are therefore not suitable for cleaning doors!

Cleaning instructions for door frames and doors:

› **Plastic Surface:**
Generally, plastic surfaces must always be wet cleaned. Dry wiping leads to a dull, blunt surface due to dust and dirt. For cleaning use only soft, lint-free cleaning cloths. Cleaning products that are specially designed for the maintenance of plastic surfaces or decorative surfaces have been developed and their application is proven. Soap containing cleaning agents are generally suitable. Abrasive and solvent-containing cleaning agents can scratch or damage the surface and therefore must not be used. In case of heavier contamination, simply allow the cleaning product to have a longer effect. The use of gloss seals can prolong the cleaning

intervals and simplify cleaning. The surface temperature must not exceed 25°C during cleaning. Cleaning agents are available in retail or from the door manufacturers.

› **Wood Surface:**
The cleaning of the wooden surfaces in the interior is best done with mild detergents such as diluted detergents or soap alkalis. Abrasive, corrosive and solvent-containing cleaners destroy the lacquer surface. For cleaning, use only soft, lint-free cleaning cloths that do not scratch the lacquer surface. Window cleaners contain small traces of alcohol and ammonia. These cleaners are suitable for cleaning the glass panes as well as cleaning wood surfaces. After cleaning, dry the wooden profiles with a dry, soft rag, because if left on too long the alcohol can soften the surface of the lacquer.
Outdoor surfaces are to be cleaned in the same way as indoor surfaces. Outdoors, the surface is more exposed to the weather - sun, rain, humidity and temperature. Over time and depending on the intensity, this can affect the surface and possibly cause small cracks and the like. These small damages must be repaired immediately (re-painting) in order to avoid more expensive repairs later on. Repairs and re-painting of door elements must only be carried out by specialists!

› **Aluminium Surface:**
With aluminium surfaces, light dirt can be removed with a sponge and water, to which a neutral cleaning agent (e.g. washing-up liquid) has been added. Do not use acidic or highly alkaline detergents that attack the surface. Never use abrasive cleaning agents or scrubbing sponges! Solvents (e.g. Acetone, petrol, nitro-thinners etc.) also damage the surface.
The cleaning of the surfaces must not be carried out in direct sunlight. The surface temperature must not exceed 25°C. Cleaning agents are available in retail or from the door manufacturers.

ATTENTION!

Abrasive and solvent-containing cleaning agents damage the surfaces and must not be used! Only use soft, lint-free cleaning cloths for care!
Additionally, test the cleaning agent and cloth on a hidden area first (the inner fold for example).

Intervals for maintenance and cleaning of surfaces:
The location, weather and external environmental influences are crucial for the frequency of cleaning and maintenance. Fixed intervals cannot therefore be specified and must be set individually. Generally, it can be noted that precise care and quick repair of minor damage can significantly prolong the service life.

Care instructions for hardware:
In order to permanently maintain the surface quality of the hardware for the intended use and to avoid adverse effects, it is important to observe the following points:

› **Corrosion Protection:**

- › Ventilate the hardware and rebate areas so that they are not exposed to direct wetness or condensation formation (important during the construction phase!).
- › Only use damp cleaning on the hardware and avoid permanent wetness!

› **Protection against dirt:**

- › Keep the hardware generally free of deposits (e.g. salt near the coast) and dirt free. During the construction phase, immediately remove dirt from plaster, mortar or similar using water.
- › Protect hardware and closing parts from dirt (dust, dirt, paint, etc.).

 **ATTENTION!**
Removal of lubrication can lead to malfunction!

› **Protection against malfunction:**

- › In order for the fittings to function permanently, they must be properly lubricated again after cleaning.
- › During cleaning, grease used to lubricate the fittings can be wiped off or smudged to such an extent that it becomes ineffective. For this reason, the lubrication applied at the factory must be restored.

ATTENTION!

Defective or damaged areas must be repaired and serviced immediately by qualified personnel.

› **Protection against aggressive, acidic cleaning agents:**

- › Clean the hardware only with a soft, lint-free cloth and a mild, ph-neutral detergent in diluted form. Never use aggressive, acid or solvent-containing detergents or scouring agents (scrubbing sponges, steel wool, etc.). These can damage the hardware!
- › Such damaged hardware may cause faulty operation and thus negatively affect the safety-relevant properties. As a result, injuries to humans as well as damage to other goods may occur.

Maintenance informations

Your door is equipped with high-quality and durable MACO hardware. To ensure that it remains functional and safe for years to come, the following maintenance instructions and mandatory intervals must be adhered to.

NOTE!

In addition to regular cleaning, the door hardware also requires an expert, systematic inspection and maintenance to ensure usability and safety.
We therefore recommend that you take out an appropriate maintenance contract with the manufacturer of your doors.

Inspection and checking intervals

Demonstrable, **annual** check	End Users	Specialist
Check the free movement of the door sash in the frame and the ease of operation in locking and unlocking and, if necessary, have it readjusted by a specialist.	✔	✔
Check all hardware and closing parts for visible damage and correct locking (abrasion) and, if necessary, have them serviced by a specialist.	✔	✔
Check the functionality of and lubricate all movable hardware and closing parts.	✔	✔

Inspection and checking intervals

Demonstrable, **annual** check	 End Users	 Specialist
Check the fixing screws and, if necessary, tighten or replace.	✘	✔
Set or check the contact pressure of the locking points, and if necessary adjust.	✘	✔

The hardware of your door must be operated at least once a month in order to prevent so-called „dormant wear".

Inspection and testing intervals, additionally for emergency exit and panic doors according to EN 179 and 1125

Demonstrable inspection every **3 - 4 weeks (Documentation obligation)**	 End Users	 Specialist
Check functionality of emergency exits, measure and record the operating force.	✔	✔
Check striker plates and single piece door strikers for blockages and remove or clean where necessary.	✔	✔
Check lubrication according to the general inspection intervals and lubricate if necessary.	✔	✔

Inspection and testing intervals, additionally for emergency exit and panic doors according to EN 179 and 1125

Demonstrable inspection every **3 - 4 weeks (Documentation obligation)**	 End Users	 Specialist
Check that no additional locking devices have been fitted.	✔	✔
Check that no changes have been made to the components and that the components correspond to their originals, i.e. types are the same.	✔	✔
Check the fastening of the control element and, if necessary, adjust it.	✘	✔

The presence and integrity of the escape route marking should also be checked during the regular inspection!

WARNING!

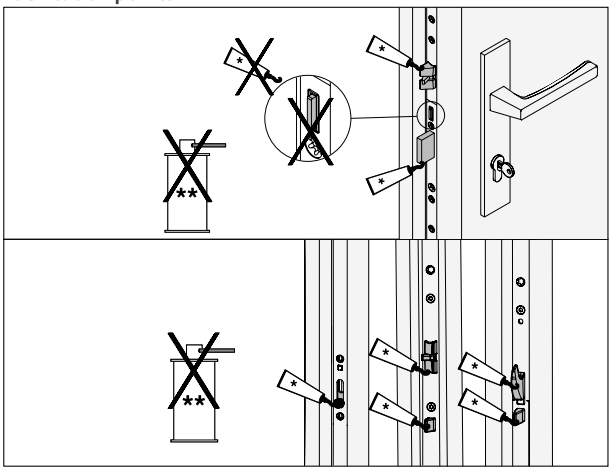
Failure to follow these instructions may result in fatal or serious injury!

ATTENTION!

✘ = may ONLY be carried out by a SPECIALIST, and NEVER by the end user!
Hinging the door in and out, as well as any adjustment of the hardware must only be carried out by a specialist! Maintenance of safety-relevant parts (hinges) may also only be carried out by a specialist!!

The hardware on your door must be actuated at least once a month to prevent so-called „dormant wear".

Lubrication points



- This representation is only symbolic. The position and number of lubrication points depends on the actual size and model of the door!
- Grease for hardware:
  Spray grease item no. 455341 or equivalent
- Amount of Lubricant:
  approx. 3 mm³ (≈ size of a pinhead)
- After lubrication, the hardware must be operated several times to distribute the lubricant.

Spare parts, customer service and disposal

Spare parts or customer service can be provided by door suppliers or door manufacturers. A list of service partners and dealers can be found at www.maco.eu.

The disposal of the hardware must be done in accordance with local regulations and laws.

Please send suggestions and ideas for improvements on our instructions by e-mail to: feedback@maco.eu.

MACO near you:
www.maco.eu/contact

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